

5-15-1970

Vessel and Barrier Designs Used to Collect Oil from the Sea

Charles J. Kessen

Indiana University - Purdue University Fort Wayne

Follow this and additional works at: http://opus.ipfw.edu/etcs_seniorproj_mctid

Opus Citation

Charles J. Kessen (1970). Vessel and Barrier Designs Used to Collect Oil from the Sea.
http://opus.ipfw.edu/etcs_seniorproj_mctid/261

This Senior Design Project is brought to you for free and open access by the School of Engineering, Technology and Computer Science Design Projects at Opus: Research & Creativity at IPFW. It has been accepted for inclusion in Manufacturing & Construction Engineering Technology and Interior Design Senior Design Projects by an authorized administrator of Opus: Research & Creativity at IPFW. For more information, please contact admin@lib.ipfw.edu.

VESSEL AND BARRIER DESIGNS USED TO COLLECT
OIL FROM THE SEA.

Prepared by: Charles J. Kessen

Prepared for: Prof. Worthley

Class: MET 497

Date: May 15, 1970.

TABLE OF CONTENTS

	Page
LIST OF ILLUSTRATIONS.....	IV
ABSTRACT.....	v
PREFACE.....	vi
DEFINING THE PROBLEM.....	1
INFLATED BARRIER DESIGN.....	2
FOAM BARRIER DESIGN.....	6
VESSEL DESIGN.....	9

APPENDIXES

A. Volume of foam required per min.....	13
Graph-Volume of foam required vs the velocity of the vessel.	
B. Drawings of the equipment to produce the foam barrier.....	16
C. Calculations for the capacity of the storage tanks, the weight of the vessel, and also the draft. Drawing of the vessel.....	17

LIST OF ILLUSTRATIONS

FIGURES	<u>Page</u>
1. Common Sence fastner.....	3
2. Lift the Dot fastner.....	3
3. Cross section of inflated barrier...	4
4. Diagram of inflated barrier.....	5
5. Sealing apparatus to form a plastic bag.....	8
6. Cross section of foam barrier.....	9
7. Returning the barrier	10

ABSTRACT

This report deals with the design of a barrier and a vessel to be used in cleaning an oil slick from the ocean surface. It presents the analysis, of an inflated barrier and also one made from a foam material, not only of its manufacturing process but how they would be employed.

The design of the vessel takes into account the housing and various components required to do the job only. It does not take into consideration the design of any of the super structure.